

Title (en)  
PLASTIC WORKING METHOD FOR METAL MATERIAL

Title (de)  
VERFAHREN ZUR PLASTISCHEN BEARBEITUNG FÜR METALLMATERIAL

Title (fr)  
PROCÉDÉ DE FAÇONNAGE PLASTIQUE POUR MATÉRIAU MÉTALLIQUE

Publication  
**EP 2851139 B1 20221102 (EN)**

Application  
**EP 12877068 A 20120517**

Priority  
JP 2012062691 W 20120517

Abstract (en)  
[origin: EP2851139A1] Provided is a plastic working method of steel including austenite, the method including: analyzing a strain ratio  $\epsilon_x$  of an estimated breaking point which is specified during plastic deformation of the steel; heating a steel such that a local temperature  $T_{local}$  is within a temperature range indicated by the following expression 1, when  $T_x$  represents a strain-induced-transformation-maximum-ductility-temperature in the unit of °C for the strain ratio  $\epsilon_x$ ,  $\Delta L_x$  represents the standard deviation of a fitted curve of critical equivalent strain which depends on the strain ratio  $\epsilon_x$  on a lower temperature side than  $T_x$ ,  $\Delta H_x$  represents the standard deviation of a fitted curve of critical equivalent strain which depends on the strain ratio  $\epsilon_x$  on a higher temperature side than  $T_x$ , and  $T_{local}$  represents a local temperature in the unit of °C of the estimated breaking point; and plastically deforming the steel after heating:  $T_x - 2 \times \Delta L_x \leq T_{local} \leq T_x + 1.25 \times \Delta H_x$

IPC 8 full level  
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CPC (source: CN EP US)  
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Cited by  
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